

Comparative analysis of higher nursing education in Ukraine and abroad

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Abstract. In the modern world, a nurse occupies a key place in the healthcare system, acting not only as not only a performer of medical orders but also as an independent professional who provides care, coordinates treatment, and engages in health education. Rising demands on the profession necessitate obtaining higher education. For Ukraine, which is currently undergoing medical sector reforms and facing a workforce deficit due to the war and migration, analyzing the global experience of nursing academicization is critical for building its own sustainable training system. The aim of the study – to conduct a comprehensive analysis of the higher nursing education system in Poland, Germany, the USA, and Ukraine, identify their common and distinct features, and substantiate the possibilities of utilizing this experience to modernize nursing education in Ukraine. The study established that modern higher nursing education at the bachelor's and master's levels is a multi-component structure that harmoniously integrates professional, research, managerial, and pedagogical components, enabling the training of specialists as clinical leaders and healthcare managers. Historical and theoretical analysis allowed for the examination of F. Nightingale's classical nursing models, which continue to form a solid scientific and philosophical foundation for the profession, defining care as an independent humanistic discipline. Within the comparative analysis, national training models and the legal status of nurses in four countries – Ukraine, Poland, Germany, and the USA – were analyzed in detail. As a result of the study, a comprehensive comparative analysis of higher nursing education models in Ukraine, Poland, Germany, and the USA was performed, which allowed for the substantiation of strategic directions for the development of this field. It has been proven that modern global nursing has definitively evolved into an independent scientific and clinical discipline, where the master's level serves as the foundation for forming the concept of advanced nursing practice.

Keywords: higher nursing education; nursing; advanced nursing practice; bachelor's level; master's level; clinical leadership; academicization of nursing.

Introduction

The current stage of the global healthcare system's development is characterised by a fundamental shift in the professional practice model for nurses. Nursing has evolved into an independent scientific

and clinical discipline with its own theoretical basis and areas of development [1]. The leading trend in this transformation has been the academisation of higher education on a global scale, which has paved the way for the practical implementation of

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the concept of advanced practice nursing [2]. In developed countries, professionals with a second master's degree are not merely viewed as experienced implementers of medical orders, but as autonomous clinicians capable of performing primary and differential diagnoses, conducting independent scientific research, and managing the treatment and care process directly based on evidence-based medicine [3]. For Ukraine, which is pursuing a path of European integration and implementing large-scale reforms to its national healthcare system, thoroughly studying and systematising international experience in organising higher nursing education is strategically important. There are significant internal contradictions between the high quality of academic training for domestic nurses at bachelor's and master's level, and their legally restricted status in clinical practice. This study is relevant because there is a functional gap between the higher education system, which effectively produces autonomous leaders, and the regulatory framework, which confines them within the boundaries of an outdated executive model.

The aim of the study: to analyse the characteristics of higher nursing education systems in Ukraine, Poland, Germany and the United States, identify common trends, advantages and challenges, and explore opportunities for adapting these systems to improve nurse training in Ukraine.

Materials and Methods

The focus of this research is the professional training process for nursing specialists at the first (bachelor's) and second (master's) levels of higher education in Ukraine and countries with high levels of professional autonomy and successful integration into the international education system, such as Poland, Germany and the USA. The analysis focuses on structural-logical frameworks, educational and professional programme content, credit load distribution in accordance with the European ECTS system, and the legal autonomy of master's degree holders in clinical practice. The primary tools used to collect and systemise data were document and report analysis, and an audit of the curricula of selected higher education institutions, including Ivan Horbachevsky Ternopil National Medical University, the University of Warsaw, Jagiellonian University, the Charité Clinic in Berlin and Johns Hopkins University. The comparative-typological method was used to classify various models of professional training, the correlational method established a direct relationship between the level of academic training and the scope of professional authority, and the descriptive method provided a detailed description of the concept of advanced practice nursing.

Results

An analysis of leading international models has made it possible to identify various strategic approaches to higher education for nurses. The Bologna Process played an important role in standardising degree structures and introducing the European Credit Transfer and Accumulation System (ECTS). Poland has demonstrated success in rapidly adapting to European Union standards. There, the social status of the profession has been significantly elevated through the expansion of legal authority, particularly the right to write prescriptions. However, low pay levels have resulted in a significant shortage of personnel in the healthcare system [4, 5]. Germany emphasises impeccable clinical preparedness through its dual education system, in which practical training is integrated into the work of university hospitals. However, issues of staff overload and inconsistencies in practical education remain [6]. The United States remains a global benchmark for professional autonomy. There, the role of a nurse practitioner is functionally equivalent to that of a primary care physician. This is supported by a robust scientific foundation and the integration of advanced technologies into the care process [7, 8].

Over the past 70 years, the USA has shown steady growth in the level of academic training (from 15 % in 1950 to 72 % in 2025). This has been achieved through a multi-level nursing education system comprising the Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN) and Nurse Practitioner (NP) qualifications, which define the roles of nurse practitioners and enhance the profession's autonomy, improving access to care. Poland experienced active growth during the period from 2000 to 2010. The rapid development of academic training (up to 98% by 2025) was the result of direct alignment with EU Directives. Germany has shown the most dynamic growth since 2020. Having maintained a low level of academic training (8–10 %) for a long time, Germany only transitioned to university-level education after adopting the *Pflegeberufegesetz* in 2020. The sharp increase to 35 % over the past five years indicates recognition that the old model was unable to meet the demands of modern intensive care (Fig. 1).

In the USA, a four-year bachelor's degree followed by a master's degree qualifies someone to become a nurse practitioner. This entitles nurse practitioners to see patients independently, make diagnoses and prescribe treatment, effectively placing them on a par with primary care physicians in terms of their role. Their level of autonomy is rated at 5 points. In Germany, despite a high level of practical training, autonomy remains moderate. Nurses are independent in matters of care and management, but limited in clinical decision-making, with a level of autonomy rated at

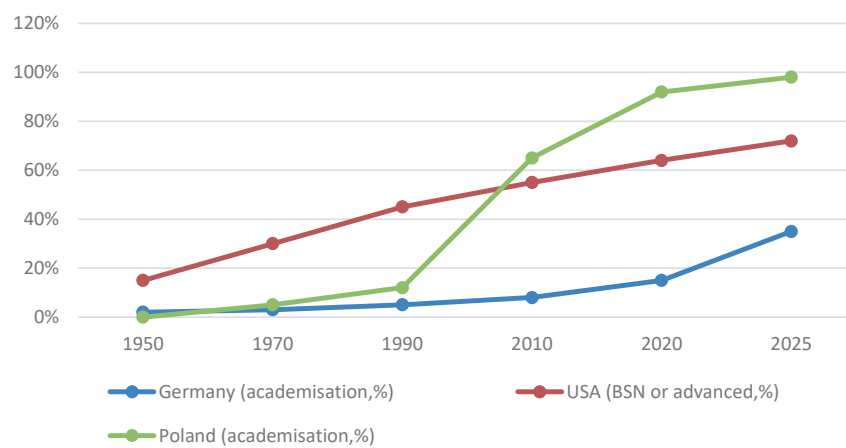


Fig. 1. Trends in the level of academic training in Nursing (1950–2025).

three points. In Poland, a nurse with a master's degree in nursing is authorised to write a limited number of prescriptions and order certain tests. However, the overall clinical strategy remains the responsibility of the physician, and the level of autonomy is set at two points (Fig. 2).

A comparative analysis of the domestic education system, using the example of the Ivan Horbachevsky Ternopil National Medical University shows that Ukraine has already achieved academic equivalence with global standards. In terms of credit load, duration of study and course content, Ukrainian bachelor's and master's programmes largely meet the highest international standards [9]. The current stage of development is characterised by the implementation of the principles of evidence-based nursing and in-depth clinical diagnostics. This ensures a high level of academic equivalence between Ukrainian education and international standards. However, legislative recognition of the professional autonomy of master's degree holders is also required. The introduction of

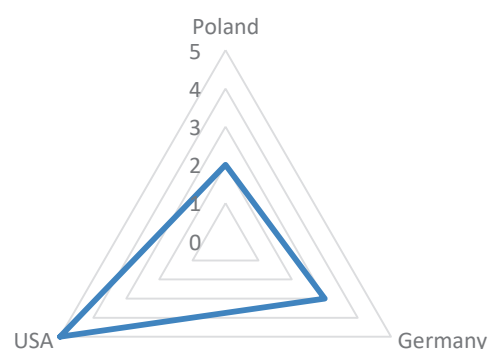


Fig. 2. Level of professional autonomy among nurses.

courses in clinical leadership and evidence-based nursing indicates that domestic education is developing in line with current global standards [10]. We compared the ratio of theoretical to practical components in bachelor's degree programmes in the USA, Germany, Poland and Ukraine (Fig. 3).

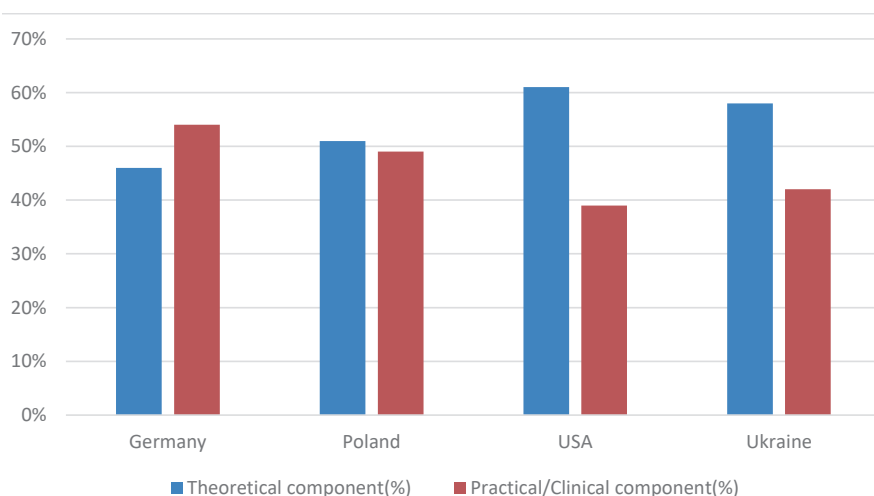


Fig. 3. Balance between theoretical and practical components in education.

Discussion

The fundamental difference in the way professional competencies are developed among nurses in the countries studied lies in their differing philosophical approaches to the profession. Germany has the most practical focus, with 54 % of the total programme (2,500 hours) devoted to this area, ensuring that graduates are fully prepared to provide direct patient care. Poland maintains a balance with 49 % (2,300 hours) of practical training, strictly adhering to EU directives. In contrast, the United States has the lowest percentage of practical training (39 %, or 1,800 hours), but this is offset by an exceptionally strong theoretical foundation (2,800 hours) and a well-developed simulation training system. In Ukraine, there is inconsistency in the provision of practical training. Educational programmes do not always meet international standards in terms of the number of clinical hours and the scientific content. At Ternopil National Medical University (TNMU), practical training (5 credits/150 hours) is integrated into each year of study to develop procedural skills.

Although Ukraine has implemented bachelor's, master's and PhD programmes in nursing, the adoption of international standards and simulation technologies appears necessary. A major challenge is the lack of a system for defining the roles of nurses with different levels of education in educational and healthcare institutions amid a staffing shortage.

Conclusions

1. An analysis of international experience has shown that the training models in Poland, Germany and the USA provide effective routes to developing professional autonomy via different mechanisms. The Polish model, in particular, demonstrates successful European integration by granting master's degree holders the

right to write prescriptions. The German model emphasises impeccable clinical preparedness through a dual education system, while the American model serves as a global benchmark where nurse practitioners function as full clinical decision-making partners with physicians.

2. A comparative analysis of structural-logical diagrams and training curricula in Ukraine, using the example of Ivan Horbachevsky Ternopil National Medical University, has demonstrated the full academic equivalence of the domestic model to international standards. In terms of ECTS credits and study duration, which includes a four-year bachelor's programme and a two-year master's programme, the Ukrainian system ensures that graduates are highly competitive and can integrate into the global medical community without a lengthy adaptation period.

3. However, the study revealed a critical functional gap: the mismatch between the high level of academic training of Ukrainian nurses with higher education and their extremely limited professional autonomy under national legislation. Unlike in developed countries, where educational level directly correlates with clinical authority, nurses with master's degrees in Ukraine remain legally restricted in their ability to make independent decisions, hindering the development of the field.

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Conflict of interest

The authors declare no conflict of interest.

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Порівняльний аналіз вищої медсестринської освіти в Україні та за кордоном

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Анотація. У сучасному світі медична(ий) сестра(брат) посідає(ють) ключове місце у системі охорони здоров'я, виступаючи не лише виконавцями призначень, а й самостійними фахівцями, які здійснюють догляд, координують лікування та займаються просвітницькою роботою. Зростання вимог до професії зумовлює необхідність отримання саме вищої освіти. Для України, яка перебуває у процесі реформування медичної галузі та стикається з кадровим дефіцитом через війну та міграцію, аналіз світового досвіду академізації медсестринства є критично важливим для розбудови власної стійкої системи підготовки кадрів. Метою дослідження було провести комплексний аналіз системи вищої медсестринської освіти у Польщі, Німеччині, США та в Україні, визначити їхні спільні та відмінні риси, а також обґрунтувати можливості використання цього досвіду для модернізації підготовки медичних сестер(братів) в Україні. У процесі дослідження встановлено, що сучасна вища медсестринська освіта бакалаврського і магістерського рівнів є багатокомпонентною структурою, яка гармонійно включає професійну, науково-дослідну, управлінську та педагогічну складові, що дозволяє готувати фахівців як клінічних лідерів та організаторів охорони здоров'я. Історико-теоретичний аналіз дозволив розглянути класичні моделі сестринства Ф. Найтінгейл, які до сьогодні формують надійний науковий і філософський фундамент професії, визначаючи догляд як самостійну гуманістичну дисципліну. В межах порівняльного аналізу було детально проаналізовано національні моделі підготовки та юридичний статус медичних сестер(братів) у чотирьох країнах: Україні, Польщі, Німеччині та США. У результаті проведеного дослідження здійснено комплексний порівняльний аналіз моделей вищої медсестринської освіти в Україні, Польщі, Німеччині та США, що дозволило обґрунтувати стратегічні напрямки у розвитку цієї галузі. Доведено, що сучасне світове медсестринство остаточно еволюціонує у самостійну науково-клінічну дисципліну, де магістерський рівень є базою для формування концепції розширеної медсестринської практики.

Ключові слова: вища медсестринська освіта; медсестринство; розширена медсестринська практика; бакалаврський рівень; магістерський рівень; клінічне лідерство; академізація медсестринства.